RCRA Compliance Evaluation Inspection Report

1) Inspectors and Authors of Report

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2) Facility Information

Paulsboro Refining Company, LLC
800 Billingsport Road
Paulsboro, New Jersey 08066
EPA ID No.: NJD002342426

3) Responsible Official(s)

Bob Muche – Environmental Affairs Manager, PBF Energy

4) Inspection Participants

Bob Muche – Environmental Affairs Manager, PBF Energy
Kevin Fetchko – Environmental, Health and Safety Director; PBF Energy
Paul McDonald – Staff Environmental Engineer, PBF Energy
Eric Campbell, Laboratory Manager, PBF Energy
Irina Nesterova, Lab Supervisor, PBF Energy
Cliff Johnson – Waste Management Coordinator, Waste Masters Solutions
Otis S. Kerns – Environmental Engineer, U.S. EPA Region 2 RCRA Compliance Branch
Christopher Krejci – Environmental Engineer, Eastern Research Group, Inc.
Joseph Watson – Senior Chemical Engineer, Eastern Research Group, Inc.

5) Date(s) and Time(s) of Inspection

9:05 a.m. July 12 to 11:50 a.m. July 14, 2016

6) Applicable Regulations

40 Code of Federal Regulations (CFR) Parts 260-280
Resource Conservation and Recovery Act (RCRA) Sections 3002, 3005 and 3007
(42 US Code - Annotated U.S.C.A. 6925 and 6927)

7) Purpose of Inspection

The objective for the visit described in this report was to conduct an unannounced compliance evaluation inspection (CEI) to assess PBF Energy's compliance with applicable RCRA requirements. The scope of the inspection covered all RCRA generator regulations, with specific focus on refinery exemptions and RCRA Subparts J, AA, BB, and CC.

8) Facility Description

The Paulsboro Refining Company, LLC is a wholly owned subsidiary of PBF Energy ("PBF"). It owns and operates a 950-acre petroleum refinery site bordering the Delaware River in the Paulsboro section of Greenwich Township, Gloucester County, New Jersey. The site was formerly owned by various companies, including Valero Refining Company, Mobil Oil Corporation (Mobil), and Standard Oil Company of New York (SOCONY). The refinery has been in operation since 1917. It currently has approximately 350 employees and about an equal number of contractors.

The facility receives medium sour and heavy sour crude oils by tanker ship or barge. This crude oil is processed at the facility into refined petroleum products such as gasoline, diesel/jet fuel, lube oil, sulfur, liquefied petroleum gas (LPG), petroleum coke, heating oil/fuel, and asphalt cement. The petroleum products are stored on-site in approximately 300 product tanks, and are shipped offsite by truck and railcar (most fuels go offsite through trucks). The design capacity of the refinery is 150,000 barrels per day. No additives or ethanol are added to fuels at the refinery; additive blending occurs at fuel terminals.

9) Facility Inspection History

The New Jersey Department of Environmental Protection (NJDEP) performed a RCRA inspection on June 16, 2016. At the time of writing, no report was yet available from the June 2016 inspection. Table 1 summarizes EPA's RCRA inspection records for this facility.

Table 1. RCRA Inspection History for the Paulsboro Refinery

Date	Agency	Type of Inspection	Violations Found?
6/16/2014	NJDEP	CEI	Unknown
3/8/2012	NJDEP	CEI	No
6/17/2010	NJDEP	CEI	No
12/12/2008	NJDEP	NRR/SNN	Yes – fined $3,000 for "Section 3005" violation. N.J.A.C. 7:1E-1.11(a), no person shall cause, suffer, allow or permit a discharge of a hazardous substance. Specifically, Valero suffered a release of approximately 171 barrels (by calculation) of a hazardous substance (Clarified Slurry Oil) of which approximately 1-5 barrels were sufficiently misted to carry outside of the containment area and beyond the property line to the east of the facility, in violation of N.J.A.C.7.1E-1.11(a).
11/6/2008	NJDEP	CDI	Yes – see 12/12/2008.
10/12/2008	NJDEP	CDI/SNY	Yes – see 12/12/2008.
2/21/2008	NJDEP	CDI	No
2/28/2007	NJDEP	CEI	No
3/5/2004	NJDEP	CDI	No
8/4/2003	NJDEP	NRR	No
7/22/2003	EPA	CEI	No
6/27/2003	NJDEP	CDI	Yes – fined $11,750 for a "262.A" violation. 40 C.F.R. 265.31- Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health of the environment. Specifically, on June 27, 2003 at 0730 hours, there was a release of approximately 30 gallons of Dissolved Air Floatation (DAF) material (K048 hazardous waste) into/onto the ground. An investigation determined that there was a pinhole leak in a welded joint of a pressurized 4-inch underground pipeline. The underground pipeline is part of the conveyance system for transferring DAF from the WWTP to the storage tanks that feed the Coker Unit.
9/6/2002	NJDEP	SNN	No
8/29/2002	NJDEP	CEI	Yes – "262.A" violation.
11/13/2000	NJDEP	CSE	No
8/17/2000	NJDEP	CDI	No
7/25/2000	EPA	CEI	No
10/28/1999	NJDEP	CDI	No
11/20/1998	NJDEP	FCI	No
9/25/1998	NJDEP	CDI	No
8/6/1998	EPA	CEI	No
12/5/1996	NJDEP	CEI	No

CDI: Case development inspection.
CEI: Compliance evaluation inspection.
NRR: Non-financial record review.
SNN: No longer a significant non-complier.
SNY: A significant non-complier.
CSE: Compliance schedule evaluation.
FCI: Focused compliance inspection.

10) Summary of Current Inspection

The inspection team discussed the various processes present at the facility and toured the facility, viewing all of the major process units that generate any waste. Figure 1 illustrates the general configuration of the major processes at the facility.

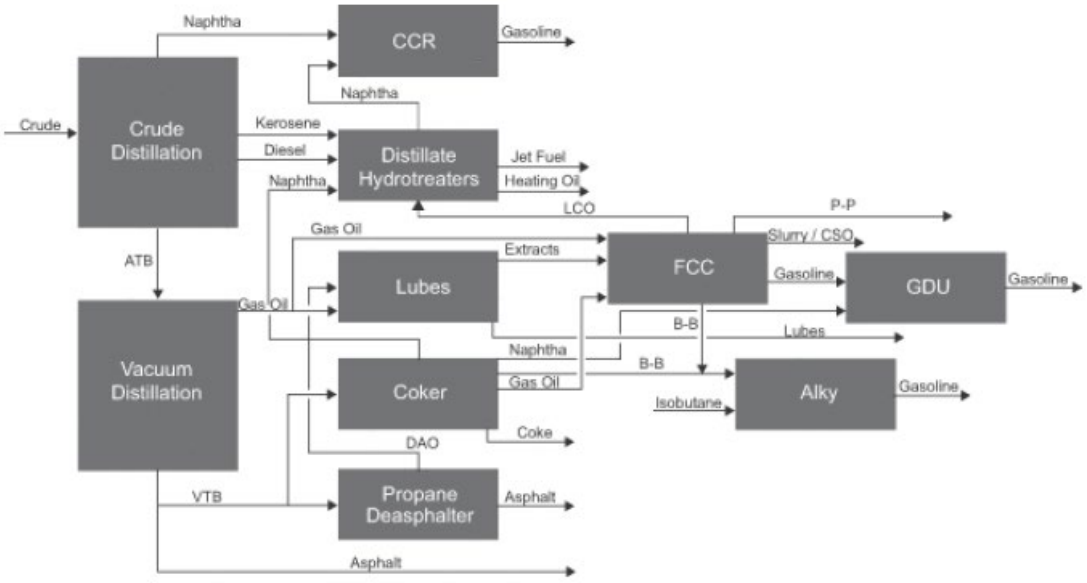

Figure 1. Process Flow Diagram
(Source: 2014 10-K Report for PBF Energy, Inc.)

PBF's crude oil processing occurs in two sets of crude units: one for motor fuels and one for lubricants.

Each unit begins with atmospheric distillation, which separates the crude oil into various "cuts," such as fuel gas (methane/ethane), butane, propane, naphtha, kerosene, and diesel product streams. Fuel gas is burned on-site to generate electricity and heat process equipment. Butane and propane are both sold as finished products. Butane can also be used as a feedstock in a process on-site. Atmospheric distillation also generates atmospheric tower bottoms, which flow to the vacuum distillation process for further separation.

The vacuum distillation process operates through the use of steam induction, which generates a vacuum at the top of the tower. The vacuum distillation process separates the atmospheric tower bottoms into gas oil, asphalt cement, and vacuum tower bottoms. Depending on whether market conditions favor the production of coke or asphalt, the vacuum tower bottoms are fed into the coker or into a propane deasphalter unit prior to being blended into asphalt cement.

The distillation process uses heat exchangers which become fouled over time. During turnaround activities, they are taken to the bundle cleaning pad and mechanically lanced

using high-pressure water to remove the build-up inside of the heat exchangers. Wastes generated at the bundle cleaning pad include wood, personal protective equipment (e.g., gloves, coveralls), and plastic used to wrap the heat exchangers for transport from the distillation units. The *Waste Management* section contains additional information on the bundle cleaning pad.

The propane deasphalter unit uses propane to remove asphaltenes from the vacuum tower bottoms. After the propane emerges from the vacuum tower bottoms, strippers separate the propane from the asphaltenes, and the asphaltenes are sent either to the coker or blended into asphalt cement. PBF periodically removes heaters from the propane deasphalter to clean them by pigging.

In addition to occasionally feeding vacuum tower bottoms to the coker, PBF routinely feeds the following oily materials into the coker:

- American Petroleum Institute (API) separator sludge from the wastewater treatment plant (WWTP);
- Floatable material from the dissolved air flotation (DAF) units in the WWTP; and
- Tank bottoms.

In accordance with RCRA regulations, PBF Energy periodically tests their coke product to ensure that it does not exhibit any toxicity characteristics. PBF's coker is a four-barrel, delayed coker. It thermally cracks materials to generate fuel-grade petroleum coke, which is used as a fuel source in several industrial sectors.

PBF's lube block removes paraffins, abrasives, and other unwanted constituents from the input (gas oil) to produce lube oil feedstock. The lube block includes a desulfurization process, a hydrogen plant, and a mobile lube dewaxing unit (MILDEW). PBF uses furfural, a corn-based solvent, to remove heavy aromatics from the oil by solvent extraction. The heavy aromatics are sent to the coker or blended with asphalt cement, and the furfural is returned to the process. The MILDEW process uses a catalyst to saturate bonds in the lube oil and prevent polymerization of the lube oil. The MILDEW catalyst is not replaced very often, and PBF staff noted that it has not been replaced in at least the last five years. The MILDEW plant also generates sour water, which flows to the sour water stripper in the sulfur plant.

PBF's Continuous Catalytic Reformer (CCR) takes naphtha off the atmospheric crude distillation unit and the distillate hydrotreaters and converts it into higher octane reformates for blending into fuels. The CCR generates a spent catalyst that is mostly alumina with some platinum chloride.

Gas oil along with extracts from the lube plant flow to the fluid catalytic cracking (FCC) unit, which generates smaller, more valuable hydrocarbon molecules from the FCC feedstocks. The FCC unit generates spent alumina-silica catalysts, which go offsite in blue roll-off bins. Emissions from the FCC unit are controlled by a wet gas scrubber with three sections:

- Particulate scrubbing section (particulate goes to clarifier, solids settle out and are disposed as nonhazardous waste);
- Weak phosphoric acid section (recirculating loop with a blowdown stream sent to the WWTP); and
- Polisher scrubber (caustic recirculating loop with a blowdown stream sent to the WWTP).

Sulfur removed by the scrubbing system ends up in the sulfur plant which produces sulfur for sale.

Blowdown from the caustic section of the scrubber goes to the WWTP, to be used as an alkaline source for pH adjustment.

In the distillate hydrotreater units, PBF uses nickel- or cobalt-molybdenum catalysts to remove sulfur from feedstocks and generate hydrogen sulfide. The hydrogen sulfide gas is absorbed into an amine solution in a cold state, and then the amine is later heated to drive off the hydrogen sulfide so that it can be sent to the sulfur plant. The distillate hydrotreater generates spent catalyst that goes out for reclamation as a K171 waste.

PBF's alkylation unit converts low-molecular-weight alkenes into higher octane alkylates using hydrofluoric acid. The unit generates an effluent which flows into the alkyl neutralization pit to be neutralized. The neutralization process generates a calcium fluoride sludge which PBF disposes of as a nonhazardous waste.

Ancillary Activities
PBF operates one main maintenance shop. The shop uses parts washers which Safety Kleen services on a roughly monthly basis. Spent solvents typically go offsite with waste codes D027, D039, D040 and F005. The shop also has a satellite accumulation area (SAA) for aerosol cans and rags. The inspection team observed one unlabeled bucket in the shop with batteries, including alkaline, lithium and nickel cadmium batteries (see Photo 1).

Photo 1. Unlabeled 5-gallon Bucket Containing Used Alkaline, Lithium Ion, and Other Batteries

PBF has various equipment and material laydown yards around the refinery for staging and storage purposes. During a visit to the construction and demolition laydown yard, the inspection team identified liquid with an oily sheen beneath a roll-off container full of laboratory sample containers and various other debris (see Photos 2 and 3).

Photo 2. Oily Sheen Beneath Roll-off Bin in Construction and Demolition Laydown Yard

Photo 3. Contents of the Roll-off Bin in the Construction and Demolition Laydown Yard (Visible Label Says Diesel)

In 1978, Mobil (former owner) became aware that significant quantities of floating petroleum hydrocarbons were located on the groundwater under the site and notified the NJDEP of this discovery. Mobil undertook measures to remediate this problem. On September 10,1979, Mobil and NJDEP entered into an Administrative Consent Order (ACO) which incorporated a schedule for the recovery of groundwater at the Paulsboro Refinery. On September 29, 1980, Mobil and NJDEP entered into a second ACO which outlined Mobil's required actions for the implementation of the recovery systems. In 1986, during the installation of pipe, Mobil contractors encountered buried drums and discolored soils. As a result of these findings, Mobil and NJDEP entered into a third ACO on May 10, 1991 under the New Jersey Water Pollution Act, the Spill Compensation and Control Act, and the Solid Waste Management Act. To determine the nature and extent of the problem presented by the discharge of pollutants, including hazardous substances, at the site, Mobil has agreed to conduct a remedial investigation and feasibility study (RI/FS) of remedial action alternatives for the site. As a result of the Superfund cleanup process, PBF now pumps approximately one million gallons per day (MGD) of contaminated groundwater to their WWTP. In addition to pumping contaminated groundwater, PBF also recovers oil from groundwater through mobile systems that go from well to well. Vacuum trucks take the recovered oil to the light slop oil recovery tank.

PBF has three flares (North Flare, New South Flare, and Old South Flare), and a flare gas recycling system to manage flare gas. Flares burn fluids from pressure relief devices.

Two natural gas pipelines supplement fuel gas that is used at the refinery to heat process equipment and generate electricity.

Analytical Laboratory

The laboratory comprises two floors; the first floor is the water lab and the second floor is the oil lab. Lab sinks are piped to the WWTP. Slop oil remaining from petroleum samples is collected in a tank behind the lab (see Photo 4). A vacuum truck picks up fluid from the tank and puts it in the slop oil tank. There is a solvent waste drum in a back room of the laboratory's first floor that laboratory staff use to consolidate solvent wastes from SAAs around the lab (see Photo 5).

Photo 4. Laboratory Slop Oil Tank (Label Reads "Hydrocarbon Samples Only for Recycle")

Photo 5. Hazardous Waste Barrel in Laboratory's 90-Day Area (Label Reads "Solvent Waste", "7-11-16")

The laboratory uses 5-gallon containers to store used colorimetric kits.

The inspection team observed an open container on the lab's second floor labeled hazardous waste that had a funnel in it (see Photo 6). Prior to the inspection closeout, Mr. Eric Campbell, the laboratory manager, noted that the material in the container is hydrocarbon material destined for recycling and is not, therefore, a hazardous waste.

Photo 6. Open, Partially Full Container in Laboratory Labeled "Hazardous Waste"

The inspection team also observed a bottle on the floor receiving solvent waste from an analytical instrument with no label and several inches of fluid (see Photo 7).

Photo 7. Two Hazardous Waste Containers in Laboratory with Illegible Labels (Faded and Worn)

Slop Oil Recycling
PBF Energy maintains light and heavy slop oil tanks (Tanks 1320 and 1920, respectively) for recycling slop oil into the refining process.

Sewer Systems and Stormwater Management
Since the facility was built in 1917, most of the plant process sewer systems are combined sewers (which convey process, storm and sanitary wastewater from all of the refinery areas to the WWTP). The facility has some separate storm sewer lines for stormwater only. Under normal conditions, all stormwater goes to the wastewater treatment plant (WWTP), but under heavy rain excess stormwater, which may be stored in three on-site ponds, may be discharged untreated.

The facility also has a lined Emergency Response Basin (ERB) north of the WWTP that was previously used to contain process wastewater and treat it via settling. PBF has plans to close the ERB in the near future, and is building two surge tanks for the water at the WWTP to replace the surge capacity provided by the ERB. The ERB currently contains sediments from historical operations and had several feet of liquid in it during the inspection. Although the inspection team received conflicting information, some facility staff noted that the ERB can also be used to contain stormwater during excess rain events. Water from the ERB flows to the WWTP before being discharged.

Tank Farms
PBF uses aboveground storage tanks at the facility to store petroleum products and other liquids. Aboveground storage tanks are located in three tank farms, referred to as the West Tank Farm, East Tank Farm and Lube Area Tank Farm. There is also storage in process units, in the Fire Training Grounds, and at the Tugboat Refueling Area at the Dock. Existing aboveground storage tanks are provided with adequate means of secondary containment. There are no underground storage tanks at the facility.

Existing aboveground storage tanks are provided with secondary containment (see above) and the product lines have been elevated. As part of its site maintenance plan, tank and product line inspections are conducted routinely.

PBF periodically cleans out storage tanks when solids and water accumulate in them. Prior to tank cleaning, a centrifuge is staged near the tank to separate oil, water, and solids. While the centrifuge is operating, water flows to the WWTP, solids go to roll-off bins, and oil returns to the refining process through slop oil tanks. Tanks are also sandblasted periodically as part of normal cleaning operations and to prepare tanks for API inspections. This activity generates sand blast grit, which is accumulated in roll-off bins and disposed offsite.

PBF staff noted that a crude tank ruptured in 2012, but the oil flowed into secondary containment and was promptly cleaned up.

Wastewater Treatment

The facility operates a WWTP for refinery wastewater generated on site, contaminated groundwater pumped from PBF's groundwater remediation operations, and wastewater from the adjacent ExxonMobil lubricants manufacturer. The WWTP is designed for a maximum flow rate of 15.5 million gallons per day MGD, but it typically processes about 7 MGD during dry weather. The capacity of the processes of the WWTP totals approximately 9.75 million gallons. The treatment processes are as follows (see below for additional detail):

1) API separator:
2) Dissolved Air Flotation (DAF);
3) activated biological treating with activated sludge;
4) sand filtration; and
5) chlorine disinfection.

Effluent from the WWTP is discharged to the Delaware River under NJDEP permit (NJ0005029).

The API separator separates wastewater treatment plant influent into solids, water, and oil. Oil skimmed from the wastewater at the API separator goes to recovered oil tanks, that return the oil to the refinery's processes via the slop oil tanks. Solids go to a "Blue Monster" container for recycling into the coker. The solids are staged in a roll-off bin adjacent to the coker (see Photo 8). Roll-off bins that are emptied into the "Blue Monster" container are returned to the WWTP and other process areas with RCRA clean labels.

Photo 8. Staging Area for Sludge Fed into Coker (Labels Say “WWTP”, “Blue Monster”, “Hazardous Secondary Material”, and “7-13-2016”)

After the API separator, the water proceeds to two different DAF units, each of which has two cells operating in parallel. Float from the DAF units goes to a “Blue Monster” container for recycling into the coker. Water goes to one of two aeration basins, which flows to one of two clarifiers where polymer is added for flocculation (see Photos 9 and 10). Clarifiers flow to sand filtration, then to chlorination (see Photo 11). Waste activated sludge goes to aeration basins. PBF staff noted that excess sludge is periodically sent to a Subtitle D landfill (Grose Landfill, near Trenton in Pennsylvania).


Photo 9. Aeration Basin at WWTP


Photo 10. Aeration Basin at WWTP (View 2)

Photo 11. Chlorine Treatment Area in WWTP

Waste Management

The waste streams generated at the facility and the processes/operations generating the wastes are listed below.

- K048 - DAF float;
- K049 - slop oil emulsion solids;
- K050 - heat exchange bundle cleaning sludges;
- K05I - API separator sludges;
- F037 - primary sludge (settled solids from the refinery process wastewater);
- F038 - secondary sludge (sludge/float generated from physical/chemical separation of oil/water/solids in process wastewater);
- K169 - crude oil storage tank bottoms;
- K170 - in-line filtration separation solids;
- K171 - spent hydrotreating catalysts;
- F002 & F003 - lab waste from QC/QA lab;
- D001 - ignitable solvent wastes from laboratory and maintenance areas;
- D002 – corrosive wastes from the laboratory and WWTP;
- D006 - cleaning liquid;
- D007 & D008 - spent carbon and sandblast;
- D009 - fluorescent tubes
- D018 – benzene wastes; and
- D027 & D039 & D040 & F005 – spent solvent from lab and parts washers.

In addition to satellite accumulation areas (SAAs) located throughout the facility, PBF operates the following waste management areas:

- The distillation separator pad;
- The Braun Pad (less-than-90-day storage area);
- The Tires, Batteries, and Accessories (TBA) Warehouse (less-than-90-day storage area);
- The bundle cleaning pad, known as Fort Apache (less-than-90-day storage area); and
- The refinery lab (less-than-90-day storage area; described above).

All these areas are for storage of hazardous waste drums or roll-off containers for less than 90 days.

The inspection team verified that each of these areas met RCRA requirements. Although there are no communication devices located in some of these areas, all facility staff carry radios that can be used for emergency notification purposes.

The inspection team also completed EPA Region 2's *Air Emissions-Subpart AA, BB, CC Checklist* to document the review of PBF's operations against RCRA air emissions requirements (see Attachment 1).

Distillation Separator Pad

The distillation pad is an offloading point to the WWTP for oily liquids hauled by vacuum trucks. The origin of the name of the area was unknown to facility staff – there is no active distillation process there now. The offloading point includes a sump with a filter for screening debris from the oily liquids, and a hazardous waste drum for consolidation of the debris (see Photos 12 and 13). At the time of the inspection, there was also a flow bin filled with slop oil staged near the offloading point (see Photo 14).

Photo 12. Debris from Vacuum Truck Offloading Point at Distillation Separator Pad

Photo 13. Debris from Distillation Separator Pad (Close-up View of the Label)

Photo 14. Flow Bin Labeled "Slop Oil" Staged at Distillation Separator Pad

Braun Pad

The Braun Pad is an area used to fill and store roll-off containers, both hazardous and nonhazardous (see Photos 15 and 16). All containers at the Braun Pad are stored on the east side of the pad for pending analysis. After they have been characterized, they are staged on the west side. Empty containers are stored in the southeast corner, off of the concrete pad (Photo 17 shows the edge of the concrete pad). Mr. Cliff Johnson, Waste Management Coordinator with Waste Masters Solutions, noted that his company usually typically takes two to three days to process and sample wastes. They receive data back from their lab in a week, and they usually make hazardous waste determinations within 15 days of receiving wastes at the Braun Pad.

Photo 15. Overview of the Braun Pad, Including Truck Unloading Ramp

Photo 16. Overview of the Braun Pad (View 2)

Photo 17. Edge of Concrete at Braun Pad

The inspection team noted several containers which said "Pending Analysis" where staff had already made a hazardous waste determination, and several labels also had vague descriptions of the waste contents (see Photo 18). Mr. Johnson noted that containers are not typically relabeled until they are shipped offsite. The inspection team also noted two roll-off bins that had torn covers (see Photos 19 and 20).

Photo 18. Roll-off Bin Containing "Alkyl" Hazardous Waste in the Braun Pad

Photo 19. Torn Lid on First Roll-off Bin Containing Hazardous Waste in the Braun Pad

Photo 20. Torn Lid on Second Roll-off Bin Containing Hazardous Waste in the Braun Pad

TBA Warehouse

PBF uses the TBA Warehouse to store universal wastes and hazardous waste drums (see Photos 21, 22, and 23). Materials that come through the TBA warehouse also included sandblast grit and contaminated soil and stone.

At the end of each day, a fork truck picks up drums from SAAs and sets drums against the outside wall of the TBA warehouse. Waste Masters Solutions processes them and puts them behind the gate in the warehouse.

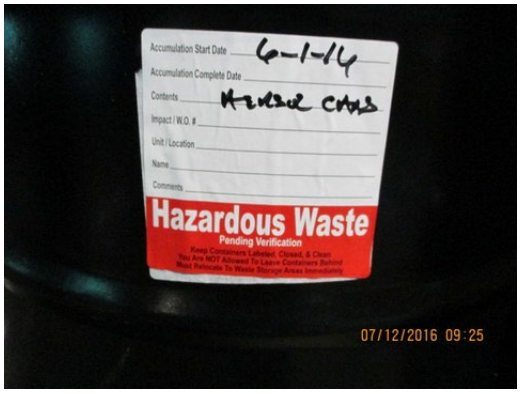

Photo 21. Drum of Waste Aerosol Cans in TBA Warehouse

Photo 22. Waste Lamps in TBA Warehouse

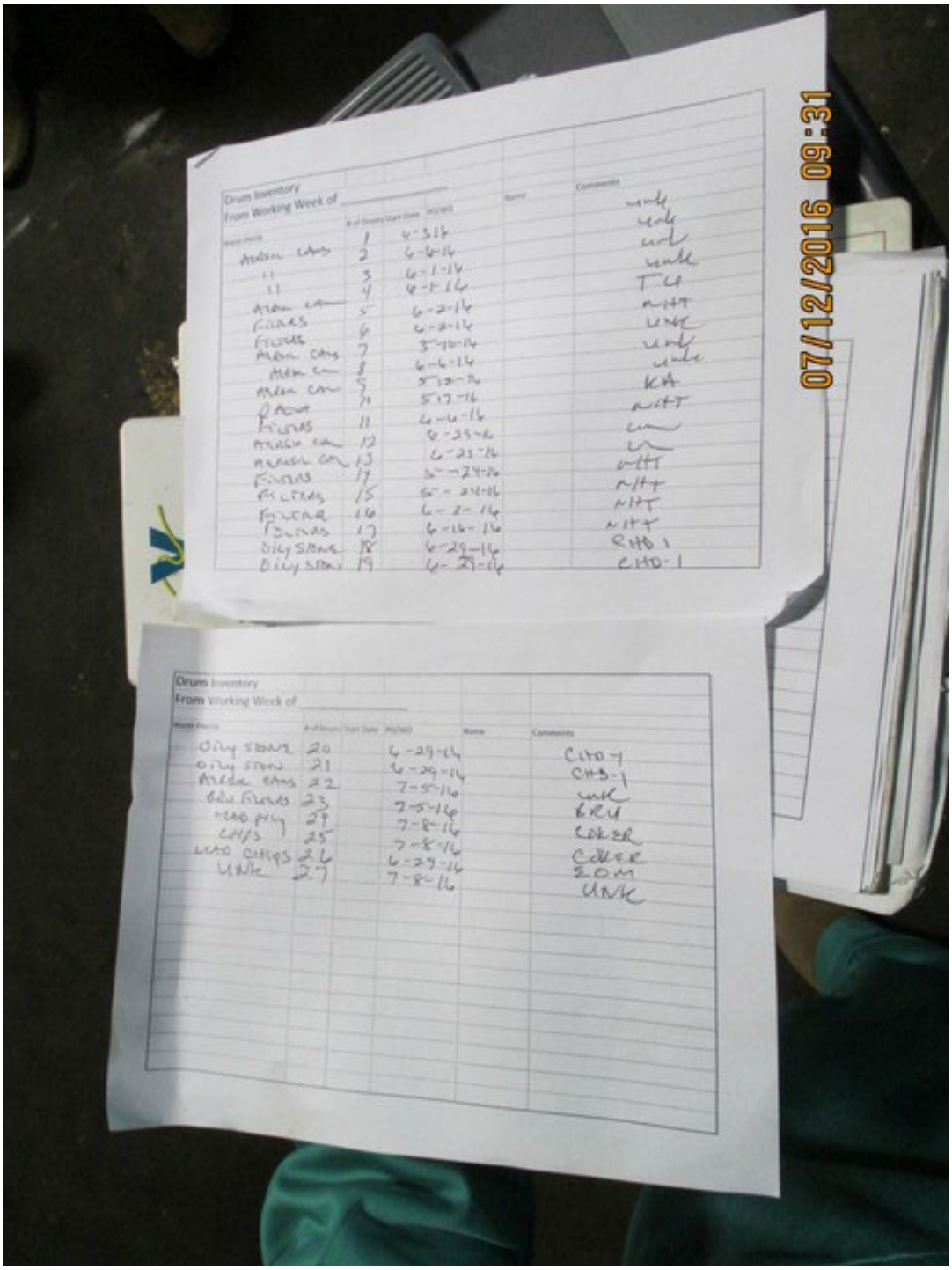

Photo 23. Drum Inventory in TBA Warehouse

Bundle Cleaning Pad

The Bundle Cleaning Pad, known as “Fort Apache” by refinery staff, is a concrete pad with a sump where heat exchangers are sprayed clean using high pressure water (see Photos 24 through 28). The Bundle Pad also stores a roll-off container which accumulates spent PPE and petroleum contaminated debris.

Photo 24. Bundle Cleaning Pad

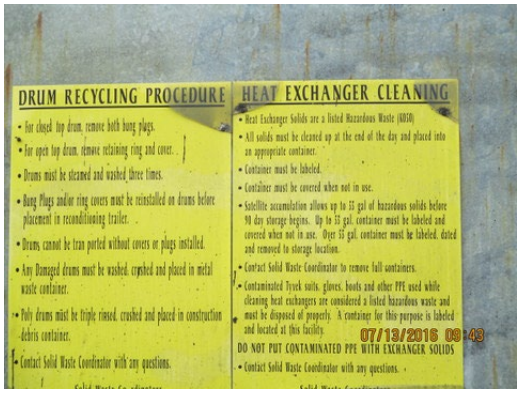

Photo 25. Instructions to Employees at Bundle Cleaning Pad

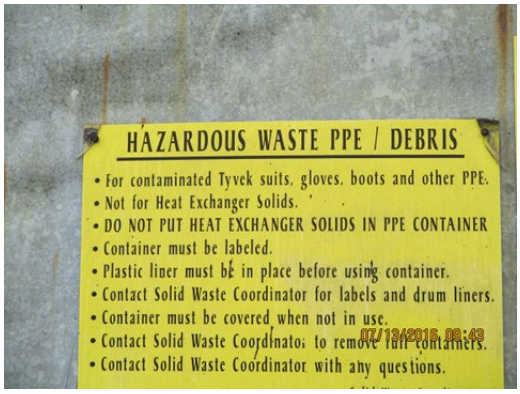

Photo 26. Additional Instructions to Employees at Bundle Cleaning Pad

Photo 27. Scaffolding and Shrouding Around Main Bundle Cleaning Pad Area

Photo 28. Scaffolding and Shrouding Around Main Bundle Cleaning Pad Area (View 2)

During the visit to the bundle cleaning pad, the inspection team observed what appeared to be used PPE in an unlabeled 5-gallon bucket (see Photo 29), and used PPE on the ground and in an open, unlabeled garbage bag (see Photos 30 and 31). The inspection team also observed various discarded materials, sludge, and water, in an unlabeled metal bin on the bundle cleaning pad (see Photo 32).

Photo 29. Yellow Plastic Fabric and Sludge in Unlabeled 5-gallon at Bundle Cleaning Pad

Photo 30. Soiled PPE in Unlabeled, Open Garbage Bag at Bundle Cleaning Pad

Photo 31. Soiled PPE on Ground at Bundle Cleaning Pad

Photo 32. Sludge, Water, Hardware, and Black Silt Fence Fabric in Unlabeled Bin at Bundle Cleaning Pad

Training

The inspection team discussed employee training related to RCRA compliance with PBF staff. PBF staff undergo a general entry-level training and annual computer based training online that covers RCRA, hazardous waste management, and has one lab-specific module for lab personnel. PBF staff and their managers receive notices when annual refresher training is due. Operators also undergo Basic Operator Training.

PBF staff that sign manifests also receive Department of Transportation training, and Mr. Paul McDonald, the environmental engineer responsible for most of the environmental

compliance issues at the facility, also receives more detailed environmental compliance training from Lion Technology.

11) Records Review

The inspection team reviewed the following records:

- Manifests and associated LDR notifications for January 2014 to June 2016;
- Biennial reports for 2013 and 2015;
- Training records for DOT training to sign hazardous waste manifests and job-specific training relevant to RCRA issues;
- Contingency plan;
- Discharge Prevention Containment and Countermeasures (DPCC) Plan;
- Most recent two characterization profiles for the facility's petroleum coke, sludge from the WWTP clarifier, calcium fluoride sludge, refractory brick, and each major type of catalyst used at the facility;
- Most recent sludge report provided to New Jersey for the disposal of the WWTP's clarifier sludge;
- Waste minimization plan; and
- Inspection logs for the 90-day areas.

These documents were found to be in order. However, the weekly inspection log for June 29, 2016 for the TBA Warehouse had "No" checked for the following questions:

- *Is there enough aisle space between roll-offs or drum rows to allow for easy access (minimum of 3-feet is required)?*
- *Are all containers holding incompatible waste separated by a physical barrier or sufficient distance?*
- *Is secondary containment (concrete pad or spill guards) adequate and free of gaps and cracks?*
- *Is emergency response equipment (radio or phone, fire extinguishers, fire water, absorbent pad, brooms/shovels) in good working condition?*
- *Are warning/emergency signs properly posted?*

There was also one week missing from bundle cleaning pad inspection logs. Dates of September 2015 inspections were September 2, 9, 16, and 30.

12) Inspection Conclusion

A closing conference was held on July 14, 2016, following the inspection. This section summarizes the main areas of concern discussed.

The inspection team identified several areas of concern related to PBF Energy's RCRA compliance.

Two roll-off bins in the Braun Pad had torn covers.

Containers holding hazardous waste should be closed unless material is being added and should be in good condition. Regulatory Citation: 40 CFR 264.171 and 264.173a.

Used PPE at the bundle cleaning pad was not in proper, labeled containers.

Each container should be labeled "Hazardous Waste" or with other words that identify the contents. Regulatory Citation: 40 CFR 262.34©(1)(ii).

An unlabeled bucket in the machine shop contained waste alkaline, lithium, and nickel cadmium batteries.

Universal waste batteries must be labeled or marked clearly with any one of the following phrases: "Universal Waste – Batteries", "Waste Batteries", or "Used Batteries. Regulatory Citation: 40 CFR 273.14(a).

The date the first battery is generated must be recorded on the buckets to verify that the used batteries do not remain in storage for more than one year. Regulatory Citation: 40 CFR 273.15©.

A container in the laboratory receiving hazardous waste solvent from an analyzer did not have a legible label.

Each container should be labeled "Hazardous Waste" or with other words that identify the contents. Regulatory Citation: 40 CFR 262.34©(1)(ii).

ERG also observed the following during the inspection:

- Hazardous waste labels read "Pending Analysis" even where the analysis had already been completed. Some labels also had only very vague information such as "Haz" or "Solid" in the contents field.
- Open container in the lab labeled hazardous waste, which was being recycled through the slop oil tank.
- The side of the TBA warehouse used to store products was disorganized, had several containers in poor condition, and had standing water with an oil sheen on the floor in some areas.
- Different PBF staff provided conflicting information about whether and how the Emergency retention basin (ERB) is currently used. Some noted that the ERB is no longer used, some noted that it is used to store storm water for treatment during major rain events, and some noted that it could be used in an emergency to contain a release of process wastewater. Facility staff noted that, due to the past uses of the ERB, the sediment in the bottom of the ERB would be a listed waste when the ERB is closed. Staff noted that closure of the ERB is currently stalled by a disagreement between PBF and Valero regarding financial responsibility for the closure.

- A metal container on the bundle cleaning pad was unlabeled but contained sludge, water, hardware, and other debris. Facility staff investigated and determined that the material was actually asphalt that had been discarded from an asphalt truck.
- Water with an oily sheen was present under a roll-off bin in the Construction and Demolition Laydown yard. The roll-off bin contained RCRA empty one-gallon tin containers for process sampling and other miscellaneous materials.
- The weekly inspection form from June 26, 2016, for the TBA warehouse was not filled out properly.
- Eyewash station in TBA Warehouse is a self-contained unit which does not records indicating the date on which the eyewash fluid is replaced. Facility staff indicated the eyewash fluid is replaced two times per year but no records are being maintained.

13) Signed:

August 5, 2016

Christopher Krejci
Environmental Engineer
RCRA Inspector (EPA Credential #10688)

Date

August 5, 2016

Joseph Watson
Senior Chemical Engineer
RCRA Inspector (EPA Credential #10600)

Date

14) Concurrence:

Otis S. Kerns
Environmental Engineer
Enforcement Officer
RCRA Compliance Branch
Waste and Chemical Enforcement Division

Date

ATTACHMENT 1

Subpart AA, BB, and CC Checklist